LIVE OAK ASSOCIATES, INC.

an Ecological Consulting Firm

BIOLOGICAL EVALUATION
CES MENDOTA
CITY OF MENDOTA, FRESNO COUNTY, CALIFORNIA

Prepared by LIVE OAK ASSOCIATES, INC.

Rick Hopkins, Principal and Senior Wildlife Ecologist
Pamela Peterson, Sr. Project Manager, Plant and Wetland Ecologist
Katrina Krakow, Sr. Project Manager and Staff Ecologist
Robert Shields, Wildlife Biologist

Prepared for

Larry Trowsdale
Clean Energy Systems, Inc.
3035 Prospect Park Drive, Suite 120
Rancho Cordova, CA 95670-6071

January 26, 2022 PN 2513-02

Oakhurst: P.O. Box 2697 • 39930 Sierra Way, Suite B • Oakhurst, CA 93644 • Phone: (559) 642-4880 • Fax: (559) 642-4883
San Jose: 6840 Via Del Oro, Suite 220 • San Jose, CA 95119 • Phone: (408) 224-8300
Truckee: P.O. Box 8810 • Truckee, CA 96161 • Phone: (530) 214-8947
South Lake Tahoe: P.O. Box 7314 • South Lake Tahoe, CA 96158 • Phone: (408) 281-5885

www.loainc.com

Permit Number: R9UIC-CA6-FY20-1

THIS PAGE INTENTIONALLY LEFT BLANK.

EXECUTIVE SUMMARY

Live Oak Associates, Inc. (LOA) conducted a reconnaissance level survey for biological resources on the approximately 71-acre proposed CES Mendota project site (hereafter referred to as the "site" or "study area"), located in the City of Mendota, Fresno County, California on December 30, 2020, and was limited to an analysis of the surface of the approximately 71-acre site itself. This report was prepared to satisfy the requirements of ESA review as required by the EPA for the underground injection UIC VI well and is not meant to include state or local laws or policies. LOA biologists conducted the survey to determine if the site supported, or had the possibility of supporting, sensitive biological resources that may potentially be impacted by the proposed construction of a biomass power plant. The site is located northeast of the intersection of Belmont Avenue and Guillan Park Drive and to the southeast of the more developed environs of Mendota. The William Robert Johnston Municipal Airport is located adjacent to and to the west and northwest of the site and the Fresno Slough is located approximately 0.6 miles to the east of the site.

Approximately 25% of the northern portion of the site is currently developed with a power plant facility along with associated plant structures and office buildings, paved parking areas, evaporation ponds, and stormwater detention ponds. The remaining southern portion of the site supports California annual grassland habitat that has been heavily disturbed by the use of the area as a "fuel yard" including staging of "fuel" (large wood piles), dirt roads and vehicle traffic, and is disced for fire suppression. The existing power plant facility has been out of use since late 2014 or early 2015.

Because of the existing conditions and past uses of the site, and the related development and disturbance, federally protected plants are considered to be absent from or unlikely to occur on the site and no federally protected plants are therefore expected to be impacted by the proposed project.

Most federally protected animals that are known to occur, or to once have occurred, in the project vicinity are considered absent or unlikely to occur on the site due to a lack of habitat. However, the site does provide potential habitat for some federally protected animals. Federally protected plant species are assessed for their potential to occur on the site in Table 2 and Federally protected animal species are assessed for their potential to occur on the site in Table 3.

The following table identifies federally protected species which have some potential to occur onsite, and therefore have some potential to be impacted by the project, a brief description as to the potential nature of that occurrence below the table.

Species (Occurrence)	Federal Status	State Status
San Joaquin kit fox (Unlikely)	Endangered	Threatened

Although the San Joaquin kit fox (SJKF) is unlikely to occur onsite, dispersing individuals have a low potential to move through the site. While the loss of foraging habitat for federally

protected animals is considered a less-than-significant impact; should SJKF occur on the site when project construction is implemented, construction activities could result in harm or mortality to this species, and this is considered a potentially significant impact of the project. Mitigation measures intended to reduce impacts to a less-than-significant level for the SJKF include pre-construction surveys, and other avoidance and minimization measures.

The project site provides nesting habitat for migratory birds and raptors. For instance, tower structures on the site currently support an active red-tailed hawk nest, and other structures could provide nesting habitat for barn owls and great-horned owls, which were both observed to be present in the structures, although not currently nesting, as well as other nesting birds. Any project-related activities that result in nest abandonment or otherwise result in harm or mortality to birds nesting on the site would be a violation of state and federal laws. Mitigations include pre-construction nesting bird surveys, and/or other avoidance and minimization measures. Additionally, the project plans to prepare a maintenance and operations manual which will include wildlife checks and phone numbers to call should any wildlife-related questions or issues arise.

Only manmade hydrological features (evaporation ponds and stormwater detention ponds) are present on the site which are maintained features, constructed in upland habitats, and that do not support wetland habitat. Additionally, these features are not likely to be considered jurisdictional waters of the U.S. by the U.S. Army Corps of Engineers (USACE) and therefore not subject to the Clean Water Act.

Lastly, the proposed project will not conflict with provisions of any regional habitat conservation plans.

TABLE OF CONTENTS

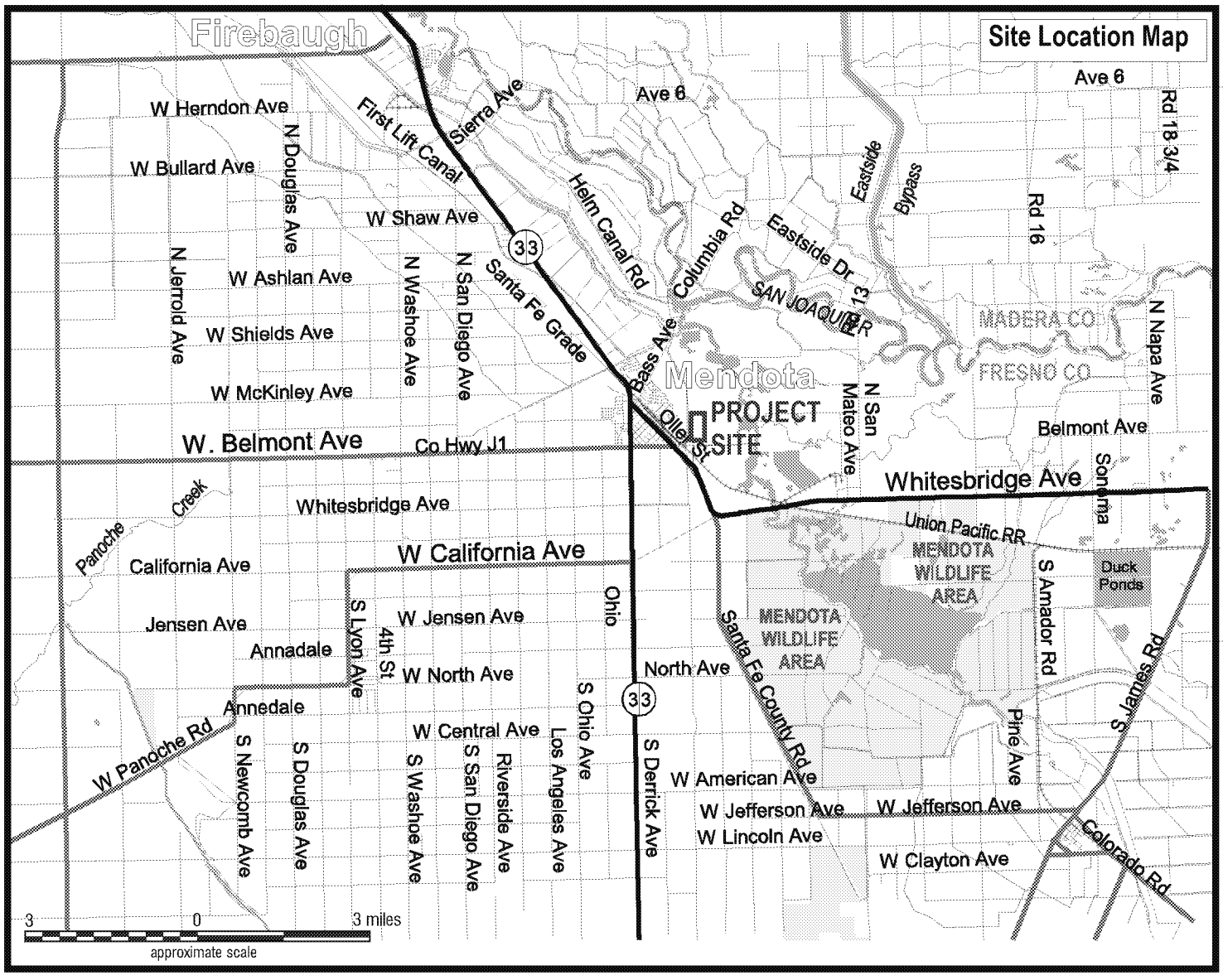
1 INTRODUCTION

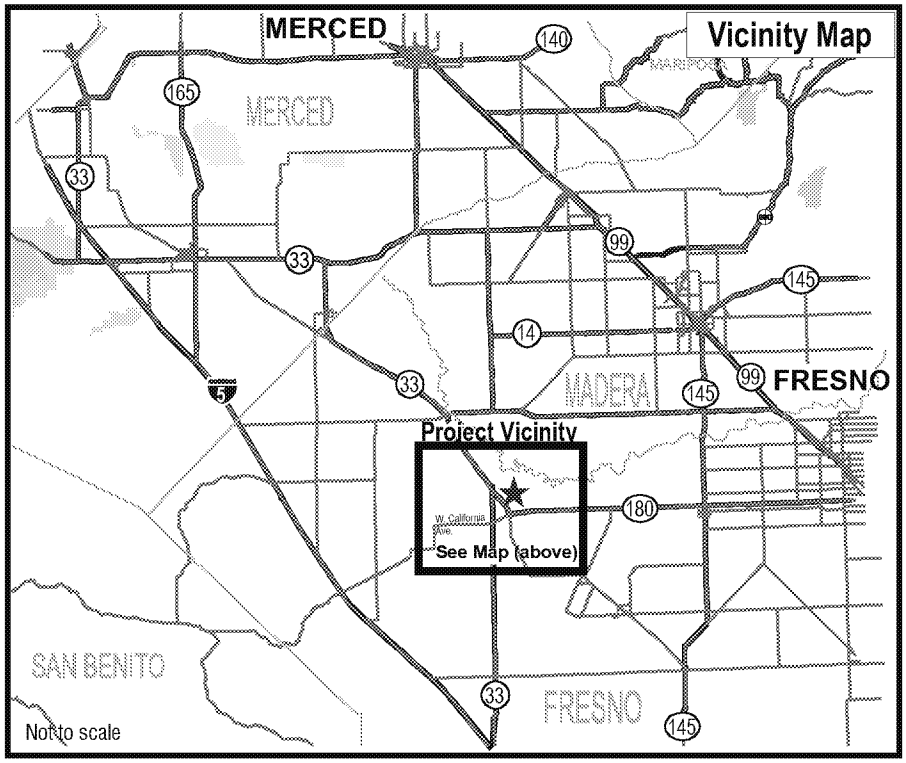
Live Oak Associates, Inc. (LOA) prepared this biological evaluation to assist Clean Energy Systems (hereafter referred to as "the applicant") in identifying federally protected biological resources that could potentially be impacted by re-development of the site and was limited to an analysis of the surface of the approximately 71-acre site itself. This report was prepared to satisfy the requirements of ESA review as required by the EPA for the underground injection UIC VI well and is not meant to include state or local laws or policies. The approximately 71-acre parcel (hereafter referred to as the "site" or "study area") is located immediately northeast of the intersection of West Belmont Avenue and Guillan Park Drive, immediately southeast of the William Robert Johnston Municipal Airport, southeast of the more developed environs of the City of Mendota, and approximately 0.6-miles west of the Fresno Slough (Figure 1). The study area is found on the Mendota Dam U.S.G.S. 7.5-minute quadrangle in Section 32, Township 13 South, and Range 15 East (Figure 2).

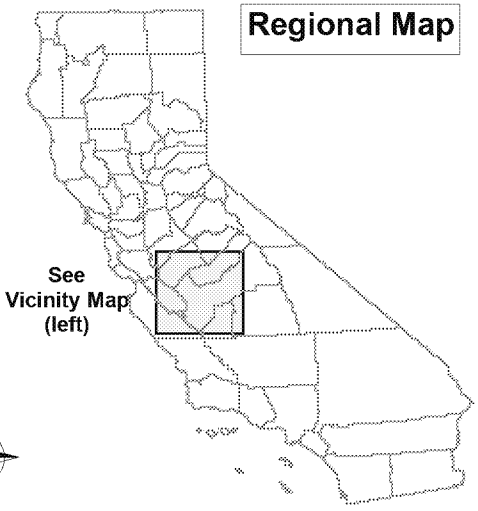
The development of parcels can damage or modify biotic habitats used by sensitive plant and wildlife species. In such cases, site development may be regulated by federal agencies. This report addresses issues related to: 1) federally protected biotic resources occurring on the study area; 2) the federal laws regulating such resources, and 3) mitigation measures which may be required to reduce the magnitude of anticipated impacts. As such, the objectives of this report are to:

- Summarize all site-specific information related to existing federally protected biological resources;
- Make reasonable inferences about the federally protected biological resources that could occur onsite based on habitat suitability and the proximity of the site to a species' known range;
- Summarize all federal natural resource protection laws that may be relevant to possible future site development;
- Identify and discuss project impacts to biological resources likely to occur on the site within the context of federal laws; and

- Identify avoidance and mitigation measures that would reduce impacts to a less-than-significant impact and are generally consistent with recommendations of the resource agencies for affected biological resources.

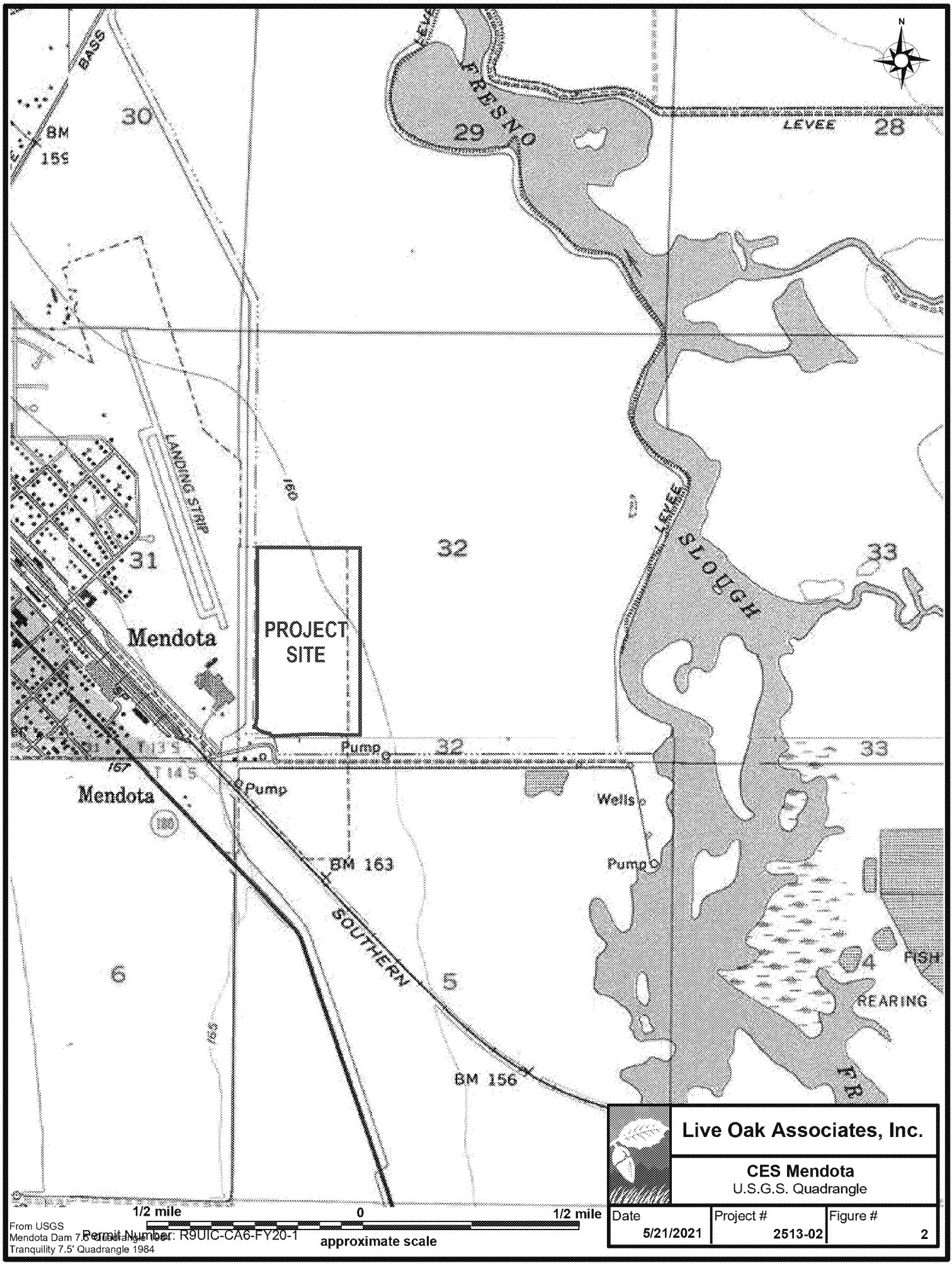






Live Oak Associates, Inc.		
CES Mendota Site / Vicinity Map		
Date 5/21/2021	Project # 2513-02	Figure # 1

Permit Number: R9UIC-CA6-FY20-1


N
BASS
BM 159
30
29
RESVR
LEVEE
28
LANDING STRIP
160
31
32
33
PROJECT SITE
Mendota
LEVEE
SLOUGH
Pump
32
33
167
145
Mendota
Pump
Wells
BM 163
Pump
SOUTHERN
6
5
4
FISH
REARING
BM 156
1/2 mile
0
1/2 mile
approximate scale
From USGS
Mendota Dam 7.5' Quadrangle 1984
Tranquility 7.5' Quadrangle 1984
Permit Number: R9UIC-CA6-FY20-1
Live Oak Associates, Inc.
CES Mendota
U.S.G.S. Quadrangle
Date 5/21/2021
Project # 2513-02
Figure # 2

The analysis of federal impacts, as discussed in Section 3.0 of this report, is based on the known and potential biotic resources of the study area discussed in Section 2.0. Sources of information used in the preparation of this analysis included: (1) the *California Natural Diversity Data Base* (CDFW 2020), (2) the *Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2001), and (3) manuals and references related to plants and animals of the San Joaquin Valley region. LOA ecologists Pamela Peterson and Robert Shields conducted a reconnaissance-level field survey of the study area on December 20, 2020. During the field survey, LOA ecologists noted habitats and principal land uses and their associated plants and animals.

Detailed or protocol-level surveys for sensitive biological resources were not conducted for this study. The level of effort was sufficient to determine whether potentially sensitive habitats, or sensitive plant and animal species may be present on the site; however, the surveys were not sufficient to establish the extent of actual use of any of the habitats on the site by special status species. Field surveys conducted for this study were sufficient to assess the significance of biological constraints associated with the site as well as the need for more detailed studies that could be warranted if sensitive biotic resources were identified in this first round of surveys.

2 EXISTING CONDITIONS

The project site is located in the trough of the San Joaquin Valley to the south of the confluence of the San Joaquin River and the Fresno Slough in the southeastern area of the City of Mendota. Surrounding land uses include the developed environs of Mendota and the William Robert Johnston Municipal Airport adjacent to the west and northwest and west, and agricultural fields to the north, east and south. As a result of its vicinity to the San Joaquin River and Fresno Slough, the project area likely at one time would have supported large areas of riparian wetlands, however, the San Joaquin River, Fresno Slough and the Mendota Pool have been levied and much of the land is now in intensive agriculture.

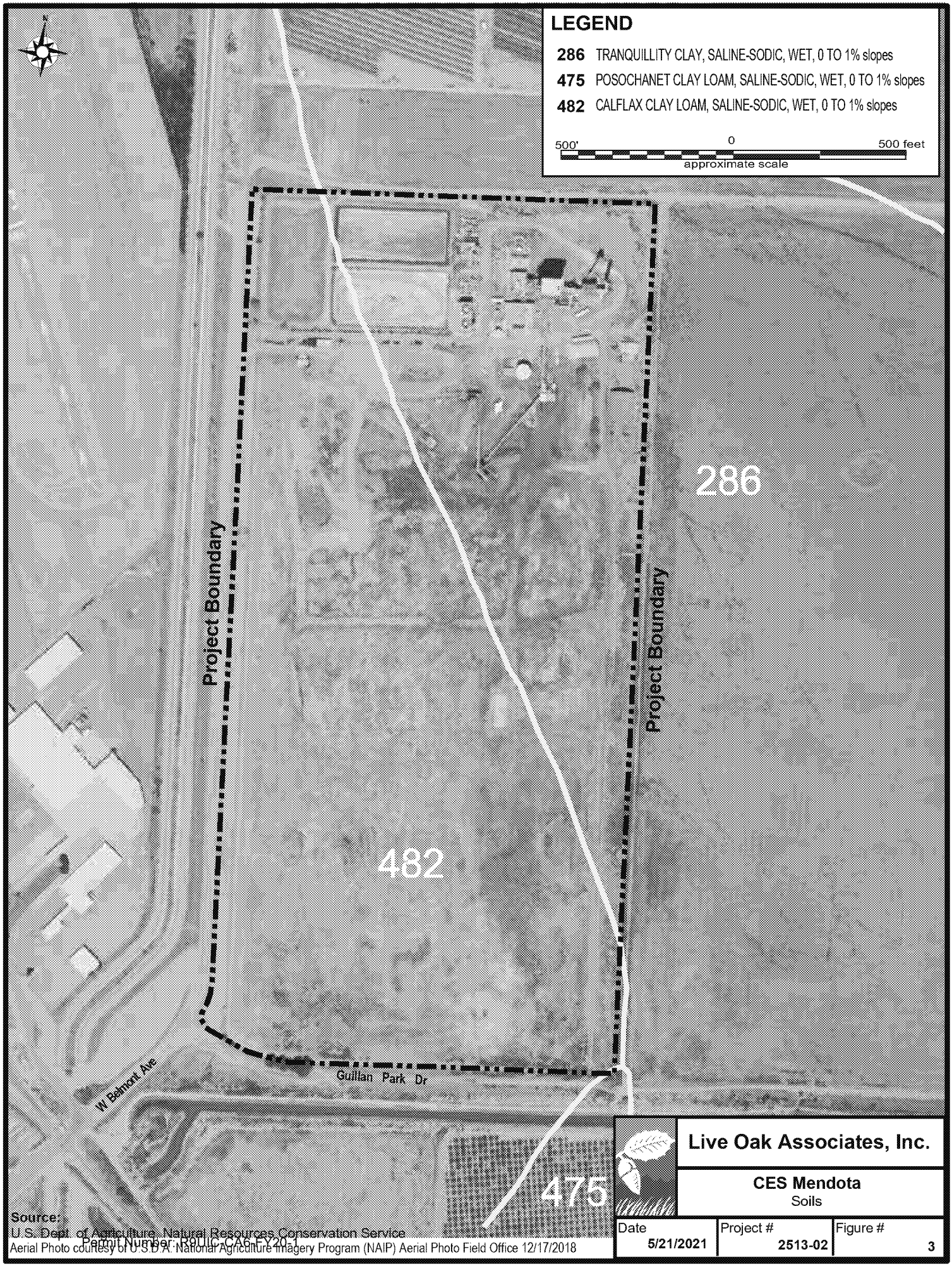
The project site is topographically relatively level with elevations ranging from approximately 150 to 160 feet (46 to 49 meters) National Geodetic Vertical Datum (NGVD). There are no natural drainages or other natural hydrological features that were observed within the project site, although several manmade hydrological features including evaporation ponds and stormwater detention basins are present.

Three soil series occur on the site (Table 1, Figure 3), however, one of these soils only occurs in the extreme southeast corner, i.e., Posochanet clay loam. These soils are found on alluvial fans and flood plains, and all soils of the site have formed from alluvium derived primarily from sedimentary rocks.

TABLE 1: SOILS OF THE CES MENDOTA PROJECT SITE, MENDOTA, CA

Soil Series	Map symbol	Drainage class	Does the soil have a hardpan or other restrictive layer?	Is the soil considered hydric?
Tranquillity clay, saline-sodic, wet, 0 to 1 percent slopes	286	Somewhat poorly drained	No	No, but hydric inclusions may occur.
Calfax clay loam, saline-sodic, wet, 0-1 percent slopes	482	Well-drained	No	No
Posochanet clay loam, saline-sodic, wet, 0-1 percent slopes	475	Moderately well-drained	No	No

Tranquillity clay, saline-sodic, wet, 0 to 1 percent slopes, is very deep and somewhat poorly drained with very slow permeability and is highly saline. Although Tranquillity clay is not considered a hydric soil, other minor soil components for this soil are considered hydric, therefore, hydric inclusions may occur.



Source:
U.S. Dept. of Agriculture, Natural Resources Conservation Service
Aerial Photo courtesy of U.S.D.A. National Agriculture Imagery Program (NAIP) Aerial Photo Field Office 12/17/2018

Permit Number: R9UIC-CA6-FY20-1

Live Oak Associates, Inc.

CES Mendota
Soils

Date	Project #	Figure #
5/21/2021	2513-02	3

ED_013214F_00000039-00013

Calflax clay loam, saline-sodic, wet, 0 to 1 percent slopes is also a deep soil and is considered to be moderately well-drained with moderately high permeability and is also highly saline. Calflax clay loam is not considered to be a hydric soil.

The San Joaquin Valley has a Mediterranean climate with warm to hot dry summers and cool winters. Annual precipitation in the general vicinity of the site is highly variable from year to year. Annual rainfall is approximately 8 to 12 inches, almost 85% of which falls between the months of October and March. Winter rainfall infiltrates the study area's soil through the early part of the winter. During winters of average precipitation, the soils of the area reach field capacity by February or March, at which time surface runoff may be generated by some storms.

2.1 BIOTIC HABITATS

Two land uses and habitats were identified for the site, consisting of 1) developed, which includes evaporation ponds, stormwater detention basin, and linear depressions, and 2) California annual grassland (highly disturbed). The northernmost portion of the site is developed as a power plant facility, while the majority of the site in the southern portion is a California annual grassland habitat that has been highly disturbed by being utilized for fuel wood storage for the power plant. The land uses and habitats of the site are depicted in Figure 4 and described in greater detail below.

2.1.1 Developed

The northern approximately one-quarter of the site is developed as a power plant facility with associated structures, parking areas, landscaping, evaporation ponds and stormwater detention basins. The facility has not been in operation for approximately six years, but the structures and grounds are still maintained regularly. There are two evaporation basins located in the northwestern corner of the site. At the time of the December 2020 survey these basins were partially inundated as a result of recent rainfall.

LEGEND

- Developed
- Evaporation Ponds
- Stormwater Detention Basin
- Linear Depressions
- CAG — California Annual Grassland (Highly Disturbed)

Source:
A.L.T.A. Survey map courtesy of Hillwig-Goodrow, Inc.

N

CAG

PARCEL 1
2.75 ACRES

PARCEL 2
2.57 ACRES

PARCEL 3A
21.44 ACRES

PARCEL 3B
9.01 ACRES

W Belmont Ave

Guillan Park Dr

Project Boundary

Live Oak Associates, Inc.		
CES Mendota Land Use / Habitats		
Date **5/21/2021**	Project # **2513-02**	Figure # **4**

0 500 1,000 Feet
approximate scale

Permit Number: xxxxx-xxxx-xxx-x

The perimeters of the basins were lined and/or primarily barren with some senesced annual grasses and forbs present. The ponds themselves did not support any vegetation. Adjacent and to the west of the evaporation ponds there was a large stormwater detention basin which was completely dry during the site visit. Vegetation within the detention basin appeared to be undifferentiated from that of the evaporation pond perimeters and other upland grassland areas of the site, described in greater detail below, in that it appeared to support only senesced non-native annual grasses and forbs. A second stormwater detention basin occurs in the southeastern portion of the developed area. The latter basin also was dry and appeared to support vegetation similar to the surrounding upland areas of the site.

One of the outside platforms of a power plant tower structure supports an active red-tailed hawk (*Buteo jamaicensis*) nest and LOA biologists flushed a barn owl (*Tyto alba*) that was roosting in another of the power plant structures during the December 2020 survey, as well as observed pellets that are believed to be of great horned owls. California ground squirrels (*Otospermophilus beecheyi*) and their burrows were observed along the banks and bottoms of the stormwater detention basins and in disturbed ground adjacent to the power plant. The desert cottontail (*Sylvilagus audubonii*) and black-tailed hare (*Lepus californicus*) were also observed on the site.

2.1.2 California Annual Grassland (Highly Disturbed)

The remaining southern portion of the study area (approximately 75%) supports ruderal California annual grasslands. The grasslands have been highly disturbed by the staging of fuel wood and by heavy vehicular traffic with barren dirt roads traversing the area. We understand that although the facility has not been operational for approximately six years, and that this area has not been used for fuel storage for that time period. However, the area is disced as needed for fire suppression, although that discing may not occur every year, but is rather based on the condition of the vegetation from year to year. Historical photos of the site from 2014 and dating back to 1998 show this ruderal area supported large stacks of fuel wood while the plant was operational. Vegetation observed within this portion of the site was completely senesced at the time of the December 2020 survey and included upland ruderal non-native

grass and forb species including farmer's foxtail (*Hordeum murinum ssp. leporinum*), soft chess (*Bromus hordeaceous*), ripgut brome (*Bromus diandrus*), wild oat (*Avena sp.*), broad-leaf filaree (*Erodium bothrys*), black mustard (*Brassica nigra*), prickly lettuce (*Lactuca serriola*) and Russian thistle (*Salsola tragus*).

Within this habitat, there were several low areas, including two manmade linear depression features near the southeastern boundary. Like the detention basins described above, these features did not support wetland vegetation, and the vegetation observed within them appeared to be undifferentiated from the upland annual grasslands.

This habitat provides limited value for most terrestrial vertebrates. Lizards that may occur here include the western fence lizard (*Sceloporus occidentalis*). Ground-feeding birds such as white-crowned sparrows (*Zonotrichia leucophrys*) and golden-crowned sparrows (*Zonotrichia atricapilla*) are likely to forage in this habitat during the winter. Red-tailed hawks (*Buteo jamaicensis*) were observed flying over this habitat. Other raptors that may be attracted to this habitat include white-tailed kites (*Elanus caeruleus*), barn owls, and great-horned owls (*Bubo virginianus*) to name a few.

Dirt mounds created by Botta's pocket gophers (*Thomomys bottae*) were found throughout this habitat. Ground squirrels (*Otospermophilus beecheyi*) and their burrows were also observed here. Other mammals such as deer mice (*Peromyscus maniculatus*) and house mice (*Mus musculus*) would likely live or forage here as well.

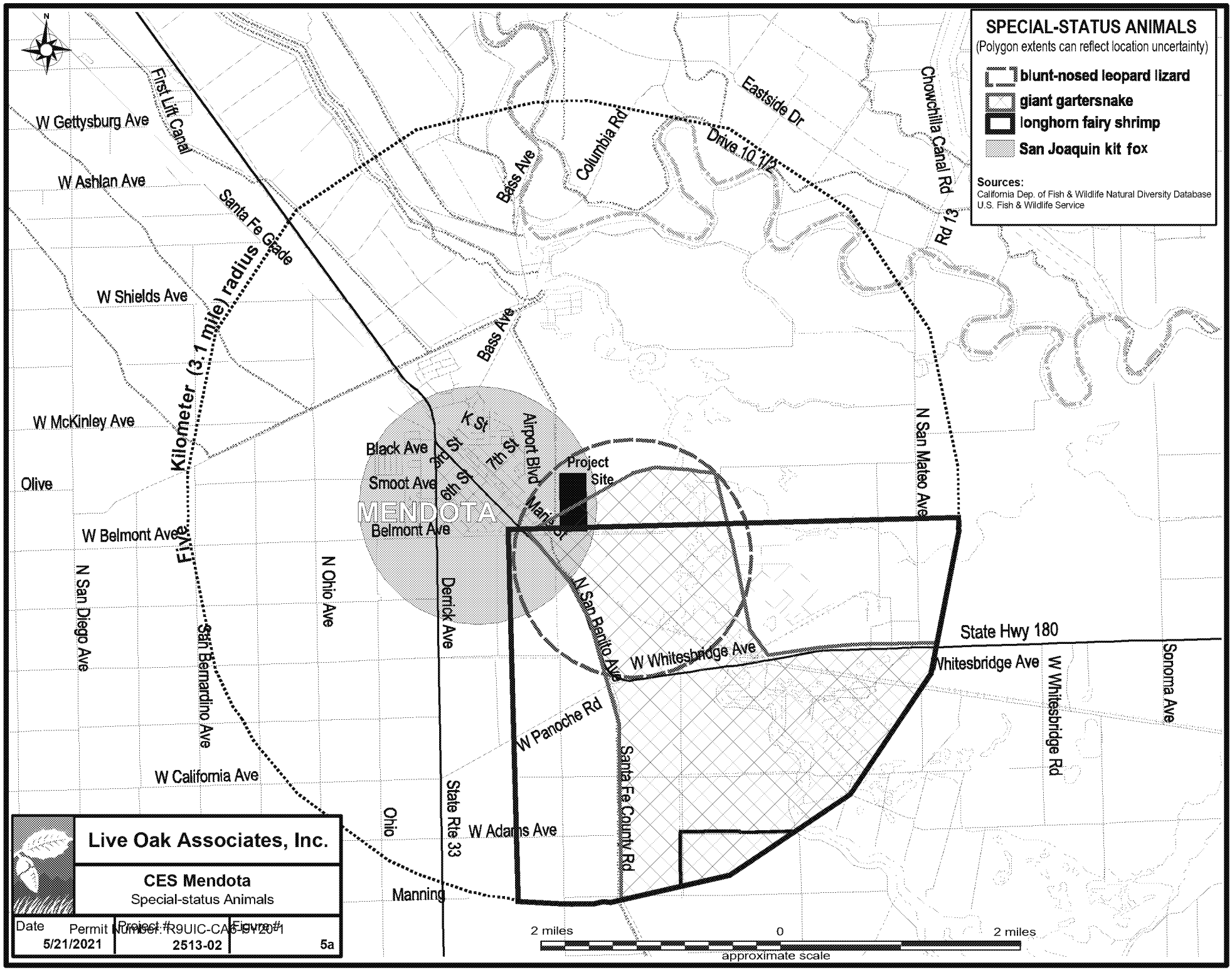
Two feral domestic dogs (*Canis familiaris*) were observed on the southern end of the grassland habitat foraging.

2.2 SPECIAL STATUS PLANTS AND ANIMALS

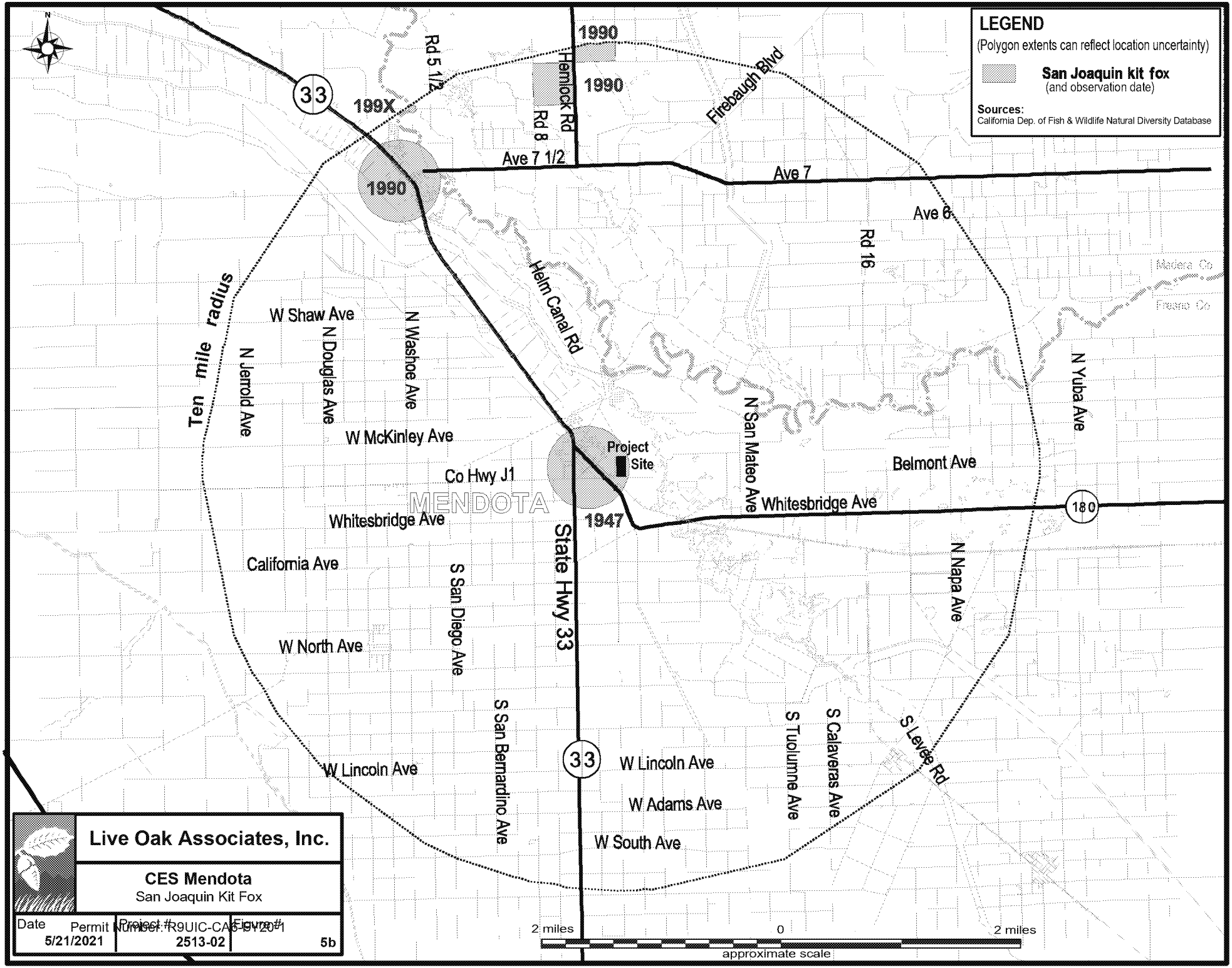
Several species of plants and animals within the state of California have low populations, limited distributions, or both. Such species may be considered "rare" and are vulnerable to extirpation as the state's human population grows and as the habitats these species occupy are converted to agricultural and urban uses. As described more fully in Section 3.1, federal laws have provided the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and

protecting the diversity of plant and animal species native to the state. A sizable number of native plants and animals have been formally designated as threatened or endangered under federal endangered species legislation. Others have been designated as "candidates" for such listing. The California Native Plant Society (CNPS) has developed its own set of lists of native plants considered rare, threatened, or endangered (CNPS 2020). Collectively, these plants and animals are referred to as "federally protected species."

Several federally protected plant and animal species are documented as occurring, or as once occurring, in the vicinity of the study area. The locations of nearby sightings of federally protected species have been depicted in Figures 5a (Federally Protected Animals) and 5b (San Joaquin Kit Fox). The California Natural Diversity Database (CNDDB) was queried focusing on nine U.S.G.S. 7.5-minute quadrangles that surround the study area for special status plants and animals. The nine quadrangles queried include Mendota Dam (in which most of the site is located), Tranquility (in which the very southern portion of the site is located), Poso Farm, Firebaugh NE, Bonita Ranch, Firebaugh, Gravelly Ford, Coit Ranch, and Jamesan. The USFWS's Information for Planning and Consultation (IPaC) website (https://ecos.fws.gov/ipac/) was also queried focusing on the project site and the vicinity of the site; the output of this query is included as Appendix C. These species, and their potential to occur in the study area, are listed in Tables 2 and 3 on the following pages. Sources of information for this table included the *California Natural Diversity Data Base* (CDFW 2020), Endangered and Threatened Wildlife and Plants (USFWS 2020), IPaC (USFWS 2020), and The California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California (CNPS 2020).



ED_013214F_00000039-00019



ED_013214F_00000039-00020

TABLE 2. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

PLANTS (adapted from USFWS 2020, CDFW 2020, and CNPS 2020)
Plant Species Listed as Threatened or Endangered under the Federal Endangered Species Act

Species	Status	Habitat	Occurrence in the Study Area*
Palmate-bracted bird's-beak *Chloropyron palmatum*	FE	Habitat: Alkaline soils within chenopod scrub and valley and foothill grasslands. Elevation: 5-155 meters. Blooms: Annual herb (hemiparasitic); May – October.	**Unlikely.** Although alkaline soils are present on the site, the site has been highly disturbed by vehicles and fuel staging, and there have been no observations of this species recorded within a three-mile radius.
San Joaquin woollythreads *Monolopia congdonii*	FE	Habitat: Sandy soils within chenopod scrub and valley and foothill grasslands. Elevation: 60-800 meters. Blooms: Annual herb; (January) February-May.	**Unlikely.** Although the site may have historically provided habitat for this species, the site has been highly disturbed by vehicles and fuel staging, and there have been no observations of this species recorded within a three-mile radius.

TABLE 3. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

ANIMALS (adapted from CDFW 2020 and USFWS 2020)
Animal Species Listed as Threatened or Endangered under the Federal Endangered Species Act

Species	Status	Habitat	Occurrence in the Study Area*
Longhorn fairy shrimp (LHFS) *Branchinecta longiantenna*	FE	Occurs in ephemeral wetlands and vernal pools of California.	**Absent**. Although the site is within the proximity polygon of the LHFS, suitable habitat for this species in the form of vernal pools is absent from the project area. The nearest recorded observation of LHFS is less than 0.5 miles to the southeast of the site.
Vernal pool fairy shrimp *Branchinecta lynchi*	FT	Occurs in vernal pools of California.	**Absent.** Suitable habitat for this species in the form of vernal pools is absent from the project site. The nearest recorded observation of VPFS is more than three miles from the site (CDFW 2021).
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	FT	Lives in mature elderberry shrubs of California's Central Valley and Sierra Foothills.	**Absent**. There are no elderberry shrubs onsite. Therefore, this species would not occur on the site.
Delta smelt Hypomesus transpacificus	FT, CT	Euryhaline species found in open waters of bays, tidal rivers, channels, and sloughs occurring in waters with salinity generally less than 10 ppt, and more usually around 2ppt. Spawning occurs in freshwater further upstream. The majority occurs in Sacramento and Solano	**Absent.** The study area is outside of the Delta smelt's range distribution, additionally, suitable habitat for this species is absent from the site.

TABLE 3. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

ANIMALS (adapted from CDFW 2020 and USFWS 2020)
Animal Species Listed as Threatened or Endangered under the Federal Endangered Species Act

Species	Status	Habitat	Occurrence in the Study Area*
		Counties in California; however, USFWS also indicates occurrences in other counties as well.	
California tiger salamander *Ambystoma californiense*	FT	Breeds in stagnant pools with continuous inundation for a minimum of three months, which may include vernal pools and stock ponds of central California; adults aestivate in grassland habitats adjacent to the breeding sites.	Absent. No historic or current records of this species are known within the vicinity of the site, additionally, the site itself does not support suitable habitat for this species due to the highly disturbed nature of the site as well as the vicinity of the site.
Red-legged frog *Rana draytonii*	FT	Dense, shrubby riparian vegetation such as arroyo willow, cattails, and bulrushes with still or slow-moving water. Perennial streams or ponds are preferred, and a salinity of no more than 4.5o/o.	**Absent**. No historic or current records of this species are known within the vicinity of the site, additionally, the site itself does not support suitable habitat for this species due to the highly disturbed nature of the site as well as the vicinity of the site.
Blunt-nosed leopard lizard *Gambelia silas*	FE	Frequents grasslands, alkali meadows and chenopod scrub of the San Joaquin Valley from Merced south to Kern Co.	**Absent**. Although the site is within the proximity polygon centered approximately 0.5 miles to the south of the study area, the site itself does not support suitable habitat for this species due to the highly disturbed nature of the site as well as the vicinity of the site.
Giant garter snake *Thamnophis gigas*	FT	Found in freshwater marsh and low gradient streams. This species utilizes uplands for refuge and cover from floods during the snake's dormant season (winter) (USFWS 2008)	**Unlikely.** Although the proximity polygon for this species includes the southern portion of the site, the nearest suitable habitat is more than 0.5 mile to the southeast, a distance this species is not known to commonly travel from suitable habitat. The nearest documented occurrence is less than half a mile south of the study area by Highway 180.
Western distinct population segment of the yellow-billed cuckoo (western yellow-billed cuckoo) Coccyzus americanus	FT	Nests in dense riparian forests. Inhabits broad, lower flood bottoms of larger river systems.	**Absent.** Suitable habitat is absent from the site. This species has not been observed in the area since 1950. It may be extirpated from the region.
Least Bell's vireo *Empidonax traillii*	FE	Breeds in willow thickets found in montane meadows of the Sierra Nevada.	**Absent.** Suitable habitat is absent from the site.
Fresno kangaroo rat *Dipodomys nitrtoides exilis*	FE	Frequent alkali scrub and herbaceous habitats with scattered shrubs in the southwestern San Joaquin Valley	**Absent.** Suitable habitat is absent from the project site and the immediate surrounding properties.

TABLE 3. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

ANIMALS (adapted from CDFW 2020 and USFWS 2020)
Animal Species Listed as Threatened or Endangered under the Federal Endangered Species Act

Species	Status	Habitat	Occurrence in the Study Area*
San Joaquin kit fox (SJKF) *Vulpes macrotis mutica*	FE	Frequents desert alkali scrub, annual grasslands and may forage in adjacent agricultural habitats.	**Unlikely.** The project site supports areas with rodent burrows and possible coyote dens and provides moderately suitable habitat for the SJKF. Four recorded observations of the SJKF exist in the CNDDB: one record from 1947 has a proximity polygon centered in the City of Mendota with the site occurring within the proximity polygon. This record was of a male SJKF which was collected Mendota Dam more than 1.5 miles to the north of the site. The other three records are from 1990 and are nearly 10 miles to the north of the site (CDFW 2020). Due to the lack of recent recorded observations of this species in the project vicinity and due to the quality of habitat onsite and in the vicinity of the site, this species' potential to occur onsite is limited to errant dispersing individuals.

*Present: Species observed on the site at time of field surveys or during recent past.
Likely: Species not observed on the site, but it may reasonably be expected to occur there on a regular basis.
Possible: Species not observed on the site, but it could occur there from time to time.
Unlikely: Species not observed on the site, and would not be expected to occur there except, perhaps, as a transient
Absent: Species not observed on the site and precluded from occurring there because habitat requirements not met.

STATUS CODES
FE Federally Endangered
FT Federally Threatened
FPE Federally Endangered (Proposed)
FC Federal Candidate

2.2 JURISDICTIONAL WATERS

Jurisdictional waters include rivers, creeks, and drainages that have a defined bed and bank and which, at the very least, carry ephemeral flows. Jurisdictional waters also include lakes, ponds, reservoirs, and wetlands. Such waters may be subject to the regulatory authority of the U.S. Army Corps of Engineers (USACE).

No natural channels or wetlands appear to be present on the site based on the reconnaissance site visit of December 30, 2020. Historical Google Earth imagery was reviewed dating from 2018 (the most current aerial available) to 1998. None of the aerial imagery appear to indicate

wetland signatures, although a small area of the site appears to be ponded in the 2017 aerial (the entire adjacent parcel to the east appears to be flooded on the same aerial).

There are two manmade evaporation ponds, two manmade stormwater detention basins, and two manmade linear depressions that occur on the site. None of these features appears to support wetland vegetation, and, in fact, with the exception of the two evaporation ponds, the features were completely dry and appeared to support vegetation undifferentiated from the upland ruderal grasslands of the site.

The National Wetland Inventory (NWI) was reviewed as part of the background review. It identifies the very southernmost area of the site as "Freshwater Emergent Wetland"; however, it was confirmed during the site survey that this area of the site does not support wetlands and it appears that the designation may be for the area to the south of the site. No other areas of the site are indicated as supporting wetlands on the NWI.

3 IMPACTS AND MITIGATIONS

As noted in Section 1.0 of this report federally protected plants and animals, animal movement corridors, wetlands and other sensitive habitats are all biotic resource issues that may affect the use of private and public lands. The discussion below addresses possible constraints to the use of the subject parcel that would be associated with federally protected sensitive biological resources occurring on the site or on adjoining lands. This discussion recognizes that not all possible impacts from various forms of site use would be significant. This discussion therefore establishes the criteria by which significance is determined. The discussion also examines federal laws that may affect how sensitive habitats are developed.

3.1 RELEVANT GOALS, POLICIES, AND LAWS

3.1.1 Threatened and Endangered Species

Federal "endangered species" legislation has provided the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting plant and animal species of limited distribution and/or low or declining populations. Species listed as threatened or endangered under provisions of the federal endangered species act, candidate species for such listing, and some plants listed as endangered by the California Native Plant Society are collectively referred to as "federally protected species." Permits may be required from the USFWS if activities associated with a proposed project will result in the "take" of a federally listed species. "Take" is defined by the federal Endangered Species Act to include "harm" (16 USC, Section 1532(19), 50 CFR, Section 17.3). The USFWS is the responding agency under the National Environmental Policy Act (NEPA). This federal agency reviews NEPA documents in order to determine the adequacy of their treatment of endangered species issues and to make project-specific recommendations for their conservation.

3.1.2 Migratory Birds

Federal law also protects most bird species. The federal Migratory Bird Treaty Act (MBTA: 16 U.S.C., scc. 703, Supp. I, 1989) prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs. This act applies to all native

birds in the United States except upland game birds such as quail, grouse, and pheasants. Project implementation disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort would be considered a significant effect.

3.1.3 Federally Protected Wetlands and Other "Jurisdictional Waters"

Jurisdictional waters include waters of the United States subject to the regulatory authority of the U.S. Army Corps of Engineers (USACE).

Clean Water Act, Section 404. The USACE regulates the filling or grading of Waters of the U.S. under the authority of Section 404 of the Clean Water Act. Drainage channels and adjacent wetlands may be considered "waters of the United States" or "jurisdictional waters" subject to the jurisdiction of the USACE. The extent of jurisdiction has been defined in the Code of Federal Regulations and clarified in federal courts.

The definition of waters of the U.S. have changed several times in recent years. In January 2020, the Environmental Protection Agency (EPA) and USACE jointly issued the Navigable Waters Protection Rule. The new rule was published in the Federal Register on April 21, 2020, and took effect on June 22, 2020.

The Navigable Waters Protection Rule (33 CFR §328.3(a)) defines waters of the U.S. as:

Territorial Seas and Traditional Navigable Waters (TNWs)

- The territorial seas and traditional navigable waters include large rivers and lakes and tidally influenced waterbodies used in interstate or foreign commerce.

Tributaries

- Tributaries include perennial and intermittent rivers and streams that contribute surface flow to traditional navigable waters in a typical year. These naturally occurring surface water channels must flow more often than just after a single precipitation event—that is, tributaries must be perennial or intermittent.
- Tributaries can connect to a traditional navigable water or territorial sea in a typical year either directly or through other "waters of the United States,"

through channelized non-jurisdictional surface waters, through artificial features (including culverts and spillways), or through natural features (including debris piles and boulder fields).

- Ditches are to be considered tributaries only where they satisfy the flow conditions of the perennial and intermittent tributary definition, and either were constructed in or relocate a tributary or were constructed in an adjacent wetland and contribute perennial or intermittent flow to a traditional navigable water in a typical year.

Lakes, Ponds, and Impoundments of Jurisdictional Waters

- Lakes, ponds, and impoundments of jurisdictional waters are jurisdictional where they contribute surface water flow to a traditional navigable water or territorial sea in a typical year either directly or through other waters of the United States, through channelized non-jurisdictional surface waters, through artificial features (including culverts and spillways), or through natural features (including debris piles and boulder fields).
- Lakes, ponds, and impoundments of jurisdictional waters are also jurisdictional where they are flooded by a water of the United States in a typical year, such as certain oxbow lakes that lie along the Mississippi River.

Adjacent Wetlands

- Wetlands that physically touch other jurisdictional waters are "adjacent wetlands."
- Wetlands separated from a water of the United States by only a natural berm, bank or dune are also "adjacent."
- Wetlands inundated by flooding from a water of the United States in a typical year are "adjacent."
- Wetlands that are physically separated from a jurisdictional water by an artificial dike, barrier, or similar artificial structure are "adjacent" so long as that structure allows for a direct hydrologic surface connection between the wetlands and the jurisdictional water in a typical year, such as through a culvert, flood or tide gate, pump, or similar artificial feature.
- An adjacent wetland is jurisdictional in its entirety when a road or similar artificial structure divides the wetland, as long as the structure allows for a direct hydrologic surface connection through or over that structure in a typical year.

The Navigable Waters Protection Rule also outlines what do not constitute waters of the United States. The following waters/features are not jurisdictional under the rule:

- Waterbodies that are not included in the four categories of waters of the United States listed above.

- Groundwater, including groundwater drained through subsurface drainage systems, such as drains in agricultural lands.
- Ephemeral features, including ephemeral streams, swales, gullies, rills, and pools.
- Diffuse stormwater run-off and directional sheet flow over upland.
- Many farm and roadside ditches.

Prior converted cropland retains its longstanding exclusion but is defined for the first time in the final rule. The agencies are clarifying that this exclusion will cease to apply when cropland is abandoned (i.e., not used for, or in support of, agricultural purposes in the immediately preceding five years) and has reverted to wetlands.

- Artificially irrigated areas, including fields flooded for agricultural production, that would revert to upland should application of irrigation water to that area cease.
- Artificial lakes and ponds, including water storage reservoirs and farm, irrigation, stock watering, and log cleaning ponds, constructed or excavated in upland or in non-jurisdictional waters.
- Water-filled depressions constructed or excavated in upland or in non-jurisdictional waters incidental to mining or construction activity, and pits excavated in upland or in non-jurisdictional waters for the purpose of obtaining fill, sand, or gravel.
- Stormwater control features excavated or constructed in upland or in non-jurisdictional waters to convey, treat, infiltrate, or store stormwater run-off.
- Groundwater recharge, water reuse, and wastewater recycling structures, including detention, retention and infiltration basins and ponds, that are constructed in upland or in non-jurisdictional waters.
- Waste treatment systems have been excluded from the definition of waters of the United States since 1979 and will continue to be excluded under the final rule. Waste treatment systems include all components, including lagoons and treatment ponds (such as settling or cooling ponds), designed to either convey or retain, concentrate, settle, reduce, or remove

pollutants, either actively or passively, from wastewater or stormwater prior to discharge (or eliminating any such discharge).

All activities that involve the discharge of dredge or fill material into waters of the U.S. are subject to the permit requirements of the USACE under Section 404 of the Clean Water Act. Such permits are typically issued on the condition that the applicant agrees to provide mitigation that result in no net loss of wetland functions or values. No permit can be issued without a CWA Section 401 Water Quality Certification (or waiver of such certification) verifying that the proposed activity will meet state water quality standards (Section 3.6.2).

Clean Water Act, Section 401. There are nine Regional Water Quality Control Boards statewide; collectively, they oversee regional and local water quality in California. The RWQCB administers Section 401 of the Clean Water Act

Pursuant to Section 401 of the Clean Water Act, the RWQCB regulates waters of the State that are also waters of the U.S. Discharges into such waters require a Section 401 Water Quality Certification from the RWQCB as a condition to obtaining certain federal permits, such as a Clean Water Act Section 404 permit (Section 3.6.1).

The RWQCB also administers the Construction Stormwater Program and the federal National Pollution Discharge Elimination System (NPDES) program. Projects that disturb one or more acres of soil must obtain a Construction General Permit under the Construction Stormwater Program. A prerequisite for this permit is the development of a Stormwater Pollution Prevention Plan (SWPPP) by a certified Qualified SWPPP Developer. Projects that discharge wastewater, stormwater, or other pollutants into a Water of the U.S. may require a NPDES permit.

3.2 ENVIRONMENTAL IMPACTS AND MITIGATIONS

The CES Mendota Biomass Power Plant project could result in impacts to approximately 71 acres of land supporting developed and highly disturbed annual grassland habitat. Less than significant and potentially significant impacts from the proposed project are discussed below.

Less-Than-Significant Potential Impacts of the Project

3.2.1 Potential Project Impacts to Federally Protected Plant Species

Impact. Two special status plants (Table 2) are considered unlikely to occur on the site as the site may historically have provided suitable habitat due to the presence of suitable soils and habitats, but they are considered unlikely to occur on the site due to development and ongoing significant disturbance. Therefore, the project is expected to have no effect on regional populations of any federally protected plant species.

Mitigation. No mitigation measures are required.

3.2.2 Potential Project Impacts to Special Status Animal Species from Habitat Modification

Impact. Nine federally protected animals are known to occur, or to once have occurred, in the general project vicinity (Table 3). Because the site has been significantly disturbed by the past power plant development/operation and fuel staging, as well as by current maintenance activities which include occasional discing for fire suppression, the value for federally protected animals is not substantial.

Species Absent from the Site, or Unlikely to Occur on the Site

Nine federally protected animal species potentially occurring within the general project vicinity would not occur in the study area or be unlikely to occur there due to the absence of suitable habitat or the absence of any field evidence of their presence (Table 3). These species include the longhorn fairy shrimp, vernal pool fairy shrimp, Valley elderberry longhorn beetle, Delta smelt, blunt-nosed leopard lizard, giant garter snake, least Bell's vireo, Fresno kangaroo rat, and San Joaquin kit fox. Therefore, habitat modification or disturbance associated with the project would have no effect on regionally available habitat used by these latter special status species.

Mitigation. Mitigation measures would not be warranted for impacts to habitat for these species.

However, *see Section 3.3.7* with regard to potentially significant impacts to individual San Joaquin kit foxes, below.

3.2.3 Potential Impacts to Riparian Habitats and Other Sensitive Natural Communities, Including Federally Protected Wetlands

Impact. Hydrological features present on the site are limited to manmade evaporation ponds and stormwater detention basins which support either no vegetation or vegetation similar to the upland non-native grasslands of the site. No natural wetlands or other natural hydrological features appear to be present on the site.

Additionally, the manmade features of the site are unlikely to be considered jurisdictional waters of the U.S. or state by the U.S. Army Corps of Engineers (USACE), as they are features that have been constructed in upland areas, are regularly maintained, and support no wetland vegetation.

Mitigation. No mitigation measures are warranted.

3.2.4 Project Impact to the Movements of Migratory Fish or Wildlife Species

Impact. The site does not appear to function as a corridor for regional seasonal movements of wildlife species. The site is just outside of Mendota, therefore, wildlife would not likely be moving into Mendota. The waterway to the east of the site is a more likely path wildlife would take to move through the valley. Additionally, the site is not within a regionally known wildlife corridor. The project would have little effect on such regional movements. Therefore, this project will result in a less than significant effect on regional wildlife movements.

Mitigation. No mitigation measures are warranted.

3.2.5 Project Impact to Fish and Wildlife Habitat

Impact. The highly disturbed nature of the site does not provide habitat of intrinsic value to fish or wildlife. Most wildlife species currently using the site will still be able to use the project vicinity after project construction. Therefore, the proposed project will result in a less than significant effect on fish and wildlife habitat.

Mitigation. No mitigation measures are warranted.

3.2.6 Degradation of Water Quality in Seasonal Creeks, Reservoirs and Downstream Waters

Impact. Potential grading resulting from project plans often leaves the soils of project footprint barren of vegetation and, therefore vulnerable to erosion. Eroded soil can be carried as sediment in seasonal creeks to be deposited in creek beds and adjacent wetlands. However, the study area is nearly level and onsite soils are not erodible. Therefore, the potential for erosion and the degradation of water quality in local waters is negligible.

Mitigation. Measures to mitigate impacts to water quality in local waters from erosion would not be necessary, especially if project implementation occurs during the dry season (summer and early fall). However, the applicant should be aware that projects involving the grading of large tracts of land must be in compliance with provisions of a general construction permit (a type of an NPDES permit) that is available from the Regional Water Quality Board (RWQCB).

Potentially Significant Project Impacts

3.2.7 Potential Impact to Individual Federally Protected Animals

No federally protected species, nor evidence of their presence were observed during the December 30, 2020, survey. Nonetheless, one species, the San Joaquin kit fox, has the potential to use the site for foraging or denning habitat. The San Joaquin kit fox is unlikely to occur on the site given the lack of any recent sighting within 10 miles of the project site. While noted above, the loss of foraging or denning habitat would be considered a less-than-significant impact of the project, should individuals' den on the site at the time of project construction, such activities could result in injury or mortality to individual San Joaquin kit foxes, and this would be a violation of federal laws, and may be considered a significant impact of the project. Potential project impacts to the San Joaquin kit fox as a result of project construction are discussed below.

San Joaquin Kit Fox

Impact. It is unlikely for a San Joaquin kit fox to move onto to the site prior to construction given the lack of recent sightings within 10 miles of the site (CDFW 2020). Nonetheless, an errant kit fox could pass through the site and/or establish a den within one of the existing

ground squirrel burrows. While in the unlikely event that a kit fox moved onto the site prior to project construction, project related activities could cause harm or injury to a kit fox. This would be considered a potentially significant impact. The following mitigation measures have been designed to reduce this impact to a less than significant level.

Mitigation. To reduce the likelihood of mortality to the San Joaquin kit fox, the following measures will be implemented prior to the onset of project implementation.

- *Pre-construction surveys*: Preconstruction surveys shall be conducted concurrently with burrowing owl surveys for the site.
    - If no active fox den is detected, no further action is needed.
    - If an active kit fox den is detected within or immediately adjacent to the area of work, the USFWS and CDFW shall be contacted immediately to determine the best course of action.
- *Minimization Measures* Permanent and temporary construction activities and other types of project-related activities should be carried out in a manner that minimizes disturbance to kit foxes, should their presence be detected on the site during preconstruction surveys or during construction of the project. Minimization measures include but are not limited to: restriction of project-related vehicle traffic to established roads, construction areas, and other designated areas; inspection and covering of structures (e.g., pipes), as well as installation of escape structures, to prevent the inadvertent entrapment of kit foxes; restriction of rodenticide and herbicide use; and proper disposal of food items and trash.
- *USFWS Notification*: The Sacramento Field Office of the USFWS and the Fresno Field Office of CDFW will be notified in writing within three working days in case of the accidental death or injury to a San Joaquin kit fox during project-related activities. Notification must include the date, time, location of the incident or of the finding of a dead or injured animal, and any other pertinent information.

Implementation of these measures would minimize potential impacts to kit fox to a less than significant level.

Maintenance and Operations

Although not required by the USFWS or EPA, the project plans to prepare a maintenance and operations manual which will include wildlife checks and phone numbers to call should any wildlife-related questions or issues arise. This manual is expected to be used prior to vegetation management, if staff have wildlife-related questions, or if other wildlife-related issues come up.

3.2.8 Project-related Mortality (Take) of Raptors and Other Migratory Bird Species

Impact. Suitable habitat for nesting raptors and migratory birds exist on the site, including a known red-tailed hawk nest and the potential for barn owls and great-horned owls to nest within the structures onsite. Migratory birds may also nest throughout the more natural areas of the site. Therefore, the project may result in the mortality of nesting raptors and other migratory bird species not afforded special status. The following mitigation measures have been designed to reduce this impact to a less than significant level.

Mitigation. The below measures will ensure nesting raptors and migratory birds are not impacted by the project.

- *Preconstruction Survey*: A qualified biologist will conduct a preconstruction survey for nesting raptors and migratory birds should the project begin within nesting season (February-August), additionally, as an active red-tailed hawk nest was observed during the site visit on December 30, 2020, this area should be surveyed for activity of this nest prior to any work should work begin December-August.
    - *No active nests*: If no active nests of a raptor or migratory bird are detected during preconstruction surveys then no further action is warranted.
    - *Buffers*: Should an active nest be observed during preconstruction surveys, the project biologist will establish a suitable construction-free buffer from the active nest which will remain in place until the project biologist has determined the young have fledged from the nest and are independent.

Additionally, species-specific measures for Swainson's hawks and burrowing owls are provided below which will ensure these species of nesting raptors and migratory birds are not impacted by the project.

Swainson's Hawk

Impact. Although suitable nesting habitat is absent from the site, and from the agricultural fields to the east, solar field to the north and the airport/warehouses to the west, potentially suitable nest trees exist in the five pine trees along the site's southern border. The project may disturb and active Swainson's hawk nest if a Swainson's hawk were to nest in one of these trees prior to construction. The nearest recorded observation of this species is from 2017 and is approximately 1,000 feet to the southwest of the site in the City of Mendota; additionally, LOA biologists have recently observed Swainson's hawks nesting east of Mendota Dam, which is approximately 1.5 miles to the north of the site. If an active Swainson's hawk nest (March through August) were to occur in any of these five trees prior to construction, the proximity of constructing the project could cause nest abonnement and/or harm to any fledglings which would violate the California Fish and Wildlife (CDFW) Code that protects raptors (hawks and owls) and federal law which protects active raptor nests. Thus, any project-related activity that caused nest abonnement or harm (e.g., harm or mortality) to adult Swainson's hawks or their eggs and young, would constitute a violation of both state and federal law. The occurrence of an active Swainson's hawk nest along the project's southern boundary prior to construction would constitute a potentially significant impact. The following mitigation measures have been designed to reduce this impact to a less than significant level.

Mitigation. The project could potentially result in the harm or mortality of nesting Swainson's hawks if this species is present during project implementation.

- *Avoidance*: If feasible, construction should take place during the time span of September 1 through February 28 to remain outside of Swainson's hawk nesting season (March 1 through August 31).
- *Preconstruction Survey*: During the nesting season (March 1 through August 31), prior to the commencement of any construction-related activity on the project site or off-site improvements, adequate preconstruction surveys shall be conducted on the project site and accessible adjacent lands within 0.5 mile of the site and off-site improvements to identify any active Swainson's hawk nests that may be present. These surveys shall conform

to the requirements of CDFW as presented in Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley, Swainson's Hawk Technical Advisory Committee, May 31, 2000. If no nesting pairs are found on or within the vicinity of the project site or off-site improvement areas, no further action is warranted.

- *Construction-free Buffers*: Should a Swainson's hawk nest become active on or near the project site or off-site improvement area during construction, or if construction begins within the nesting season after a Swainson's hawk nest has already been established, a construction-free buffer shall be established. A minimum buffer distance of 600 feet shall be established for a nest that is already active prior to construction, and a minimum buffer distance of 150 feet shall be used for a nest that starts after construction has already initiated. These minimum distances are based on potential impact distances stated in the Swainson's Hawk Technical Advisory Committee's Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (2000). Appropriate buffer distances shall be determined on the ground by a qualified biologist and shall be based on actual observations of the nest and parent behavior, the stage of nesting, and level of potential disturbance. This buffer shall be identified on the ground with flagging or fencing and shall be maintained until a qualified biologist has determined that the young have fledged, and the nest is inactive. The biologist shall have the authority to stop construction if construction activities are likely to result in nest abandonment.

Implementation of all the measures above will mitigate impacts to Swainson's hawks to a less-than-significant level.

Western Burrowing Owl

Impact. No burrowing owls nor evidence of their presence were detected during the December 30, 2020, survey. However, scattered populations of California ground squirrels and other fossorial animals have created potential onsite burrow habitat for the burrowing owl. The project implementation during the nesting season (February through August) could result in the destruction of any nests and nestlings that may be present. Project implementation during the remainder of the year could result in mortality to resident owls located deep in their burrows.

Provisions of the California Fish and Wildlife (CDFW) Code protect raptors (hawks and owls) and active raptor nests. Project-related harm or mortality to the burrowing owl would constitute a violation of both state and federal law that would be considered a potentially significant impact to burrowing owls. The following mitigation measures have been designed to reduce this impact to a less than significant level.

Mitigation. The project could potentially result in the harm or mortality of the western burrowing owl if this species is present during project implementation.

- *Pre-construction surveys*: Pre-construction surveys will be conducted by a qualified biologist for burrowing owls within 14 days prior to the onset of construction with a follow-up survey within 24 hours prior to the onset of construction. This survey will be conducted according to methods described in the *Staff Report on Burrowing Owl Mitigation* (CDFG 2012).
- *No Active Nests*: If no active burrowing owl nests are detected then no further action is warranted.
- *Avoidance of Active Nest Burrows*: If active nest burrows are located within the project site or adjacent to the project site, including any proposed placement of staging equipment during pre-construction surveys, a qualified biologist will place an appropriate construction-free buffer around the located nests, which will remain off-limits to construction until the breeding season is over or until the project biologist confirms the young have fledged and left the nest burrow.
- *Relocation*: During the non-breeding season (August through January), resident owls may be passively relocated. The relocation of resident owls must be according to a relocation plan prepared by a qualified biologist in consultation with the California Department of Fish and Wildlife.

Implementation of all the measures above will mitigate impacts to burrowing owls to a less-than-significant level.

4 LITERATURE CITED

California Department of Fish and Wildlife. 1995. California fish and game code. Gould Publications. Binghamton, N.Y.

California Department of Fish and Wildlife. 2020. Special Animals List. The Natural Resources Agency, Sacramento, CA.

California Department of Fish and Wildlife. 2020. California natural diversity database. The Resources Agency, Sacramento, CA. Accessed on-line on October 5, 2020.

California Native Plant Society (web application). 2020. Inventory of Rare and Endangered Vascular Plants of California (7th Edition). Rare Plant Scientific Advisory Committee, David P. Tibor, Convening Editor. California Native Plant Society, Sacramento, CA. Accessed on-line on December 28, 2020, at http://www.rareplants.cnps.org/

Calflora (web application). 2020. Berkeley, California: The Calflora Database [a non-profit organization]. Accessed on-line on December 28, 2020, at https://www.calflora.org/

Jennings, M. R. and M. P. Hayes. 1994. Amphibian and Reptile Species of Special Concern in California. California Department of Fish and Game, Final Report.

Natural Resource Conservation Service (web application). 2020. Custom Soil Resource Report for Fresno County, Western Part, California, USDA. Accessed on December 28, 2020, at http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx.

U. S. Army Corps of Engineers. 1987. Corps of Engineers wetlands delineation manual. Department of the Army.

U. S. Fish and Wildlife Service. 2020. Endangered and threatened wildlife and plants.

U. S. Fish and Wildlife Service. 2020. IPaC resource list, dated September 8, 2020. 13pp.

U. S. Fish and Wildlife Service (web application). 2020. National Wetlands Inventory. Accessed on-line on December 28, 2020, at https://www.fws.gov/wetlands/.

APPENDIX A:
TERRESTRIAL VERTEBRATE SPECIES POTENTIALLY OCCURING ON THE PROJECT AREA

The species listed below are those, which may reasonably be expected to use the habitats of the study area. The list was not intended to include birds which are vagrants or occasional transients. Its purpose was rather to include those species that may be expected to routinely and predictably use the project area during some or all of the year. Species observed during December 30, 2020, are marked with an asterisk.

CLASS: AMPHIBIA (Amphibians)
ORDER: SALIENTIA (Frogs and Toads)
FAMILY: BUFONIDAE (True Toads)
Western Toad (*Bufo boreas*)
FAMILY: HYLIDAE (Treefrogs and relatives)
Pacific Treefrog (*Pseudacris regilla*)
FAMILY: RANIDAE (True Frogs)
Bullfrog (*Rana catesbeiana*)

CLASS: REPTILIA (Reptiles)
ORDER: SQUAMATA (Lizards and Snakes)
SUBORDER: SAURIA (Lizards)
FAMILY: IGUANIDAE (Iguanids)
Western Fence Lizard (*Sceloporus occidentalis*)
Side-blotched Lizard (*Uta stansburiana*)
FAMILY: TEIIDAE (Whiptails and relatives)
Western Whiptail (*Cnemidophorus tigris*)
FAMILY: ANGUIDAE (Alligator Lizards and relatives)
Southern Alligator Lizard (*Gerrhonotus multicarinatus*)
SUBORDER: SERPENTES (Snakes)
FAMILY: COLUBRIDAE (Colubrids)
Racer (*Coluber constrictor*)
Coachwhip (*Masticophis flagellum*)
Gopher Snake (*Pituophis melanoleucus*)
Common Kingsnake (*Lampropeltis getulus*)
FAMILY: VIPERIDAE (Vipers)
Western Rattlesnake (*Crotalus viridis*)

CLASS: AVES (Birds)
ORDER: PELICANIFORMES (Pelicans, Cormorants, Ibises, Egrets, Boobys).
FAMILY: ARDEIDAE (Herons and Bitterns)
Great Blue Heron (*Ardea herodias*)
Great Egret (*Casmerodius albus*)
FAMILY: THRESKIORNITHIDAE (Ibises and Roseate Spoonbills)
White-faced Ibis (*Plegadis chihi*)
ORDER: FALCONIFORMES (Vultures, Hawks, and Falcons)
FAMILY: CATHARTIDAE (American Vultures)
Turkey Vulture (*Cathartes aura*)

FAMILY: ACCIPITRIDAE (Hawks, Old World Vultures, and Harriers)
White-tailed Kite (*Elanus caeruleus*)
Northern Harrier (*Circus cyaneus*)
Sharp-shinned Hawk (*Accipiter striatus*)
Cooper's Hawk (*Accipiter cooperi*)
Swainson's Hawk (Buteo swainsoni)
*Red-tailed Hawk (*Buteo jamaicensis*)
Ferruginous Hawk (*Buteo regalis*)
Rough-legged Hawk (*Buteo lagopus*)
Golden Eagle (*Aquila chrysaetos*)
FAMILY: FALCONIDAE (Caracaras and Falcons)
American Kestrel (*Falco sparverius*)
Merlin (*Falco columbarius*)
Peregrine Falcon (*Falco peregrinus*)
Prairie Falcon (*Falco mexicanus*)

ORDER: CHARADRIIFORMES (Shorebirds, Gulls, and relatives)
FAMILY: CHARADRIIDAE (Plovers and relatives)
Killdeer (*Charadrius vociferus*)
ORDER: COLUMBIFORMES (Pigeons and Doves)
FAMILY: COLUMBIDAE (Pigeons and Doves)
Rock Dove (*Columba livia*)
Mourning Dove (*Zenaida macroura*)
ORDER: STRIGIFORMES (Owls)
FAMILY: TYTONIDAE (Barn Owls)
*Common Barn Owl (*Tyto alba*)
FAMILY: STRIGIDAE (Typical Owls)
Western Screech Owl (*Otus kennicottii*)
Great Horned Owl (*Bubo virginianus*)
Short-eared Owl (*Asio flammeus*)
ORDER: CAPRIMULGIFORMES (Goatsuckers and relatives)
FAMILY: CAPRIMULGIDAE (Goatsuckers)
Common Poorwill (*Phalaenoptilus nuttalli*)
ORDER: APODIFORMES (Swifts and Hummingbirds)
FAMILY: TROCHILIDAE (Hummingbirds)
Black-chinned Hummingbird (*Archilochus alexandri*)
Anna's Hummingbird (*Calypte anna*)
ORDER: PICIFORMES (Woodpeckers and relatives)
FAMILY: PICIDAE (Woodpeckers and Wrynecks)
Downy Woodpecker (*Picoides pubescens*)
Northern Flicker (*Colaptes auratus*)
ORDER: PASSERIFORMES (Perching Birds)
FAMILY: TYRANNIDAE (Tyrant Flycatchers)
Black Phoebe (*Sayornis nigricans*)
Say's Phoebe (*Sayornis saya*)
Ash-throated Flycatcher (*Myiarchus cinerascens*)
Western Kingbird (*Tyrannus verticalis*)

FAMILY: ALAUDIDAE (Larks)
Horned Lark (*Eremophila alpestris*)
FAMILY: HIRUNDINIDAE (Swallows)
Tree Swallow (*Tachycineta bicolor*)
Violet-green Swallow (*Tachycineta thalassina*)
Northern Rough-winged Swallow (*Stelgidopteryx serripennis*)
Cliff Swallow (*Hirundo pyrrhonota*)
Barn Swallow (*Hirundo rustica*)
FAMILY: CORVIDAE (Jays, Magpies, and Crows)
Scrub Jay (*Aphelocoma coerulescens*)
American Crow (*Corvus brachyrhynchos*)
Common Raven (*Corvus corax*)
FAMILY: TROGLODYTIDAE (Wrens)
Bewick's Wren (*Thryomanes bewickii*)
House Wren (*Troglodytes aedon*)

FAMILY: MUSCICAPIDAE (Old World Warblers, Gnatcatchers, Kinglets, Thrushes, Bluebirds, and Wrentits)
Western Bluebird (*Salia mexicana*)

FAMILY: MIMIDAE (Mockingbirds and Thrashers)
Northern Mockingbird (*Mimus polyglottos*)
FAMILY: MOTACILLIDAE (Wagtails and Pipits)
American Pipit (*Anthus rubescens*)

FAMILY: LANIIDAE (Shrikes)
Loggerhead Shrike (*Lanius ludovicianus*)
FAMILY: STURNIDAE (Starlings)
European Starling (*Sturnus vulgaris*)
FAMILY: EMBERIZIDAE (Wood Warblers, Sparrows, Blackbirds, and relatives)
Vesper Sparrow (*Pooecetes gramineus*)
Savannah Sparrow (*Passerculus sandwichensis*)
Lark Sparrow (*Chondestes grammacus*)
Song Sparrow (*Melospiza melodia*)
Golden-crowned Sparrow (*Zonotrichia atricapilla*)
White-crowned Sparrow (*Zonotrichia leucophrys*)
Red-winged Blackbird (*Agelaius phoeniceus*)
Tricolored Blackbird (*Agelaius tricolor*)
Western Meadowlark (*Sturnella neglecta*)
Brewer's Blackbird (*Euphagus cyanocephalus*)
Brown-headed Cowbird (*Molothrus ater*)

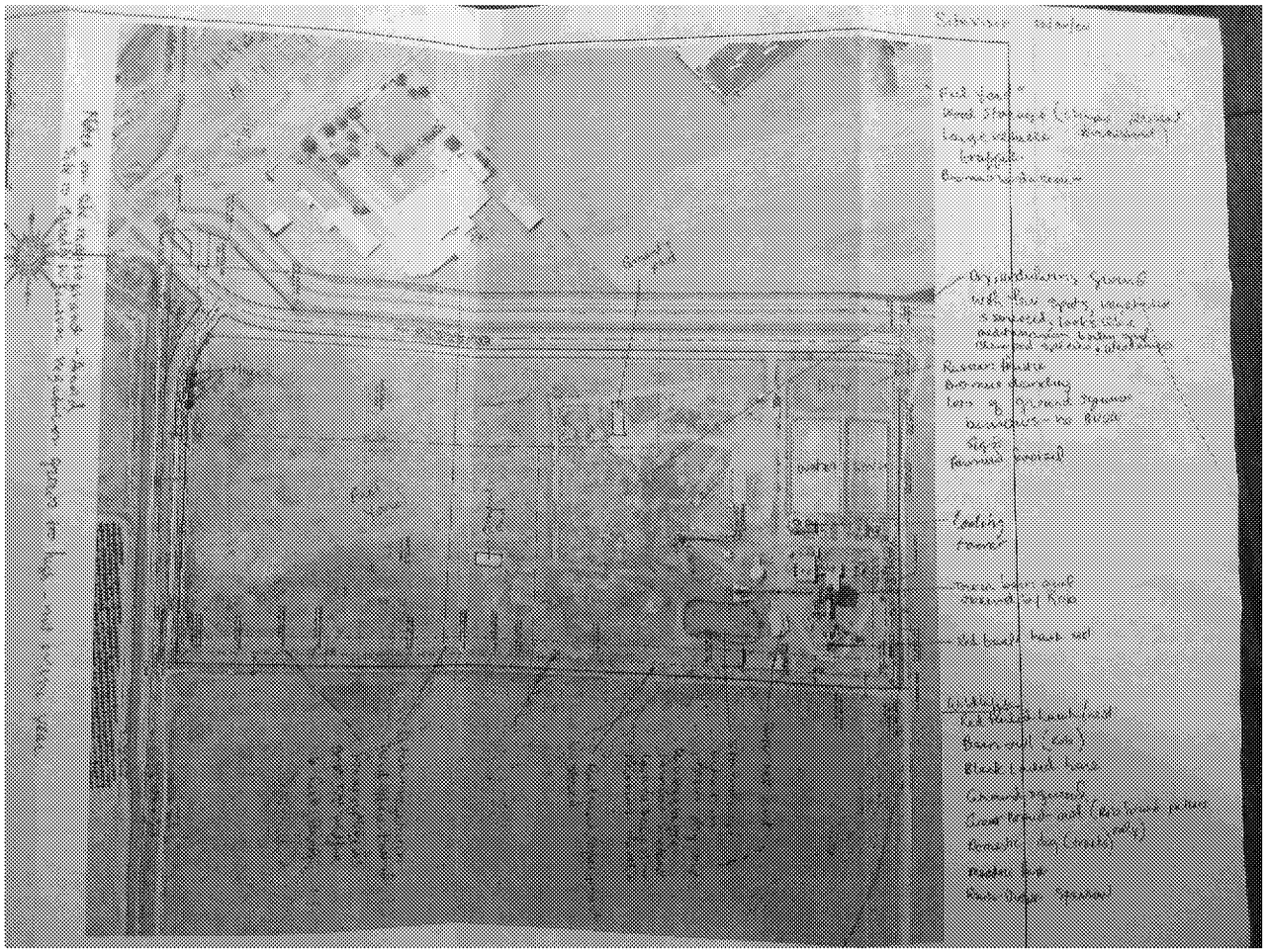
FAMILY: FRINGILLIDAE (Finches)
House Finch (*Carpodacus mexicanus*)
Lesser Goldfinch (*Carduelis psaltria*)

American Goldfinch (*Carduelis tristis*)
FAMILY: PASSERIDAE (Old World Sparrows)
House Sparrow (*Passer domesticus*)

CLASS: MAMMALIA (Mammals)
ORDER: MARSUPIALIA (Marsupials)
FAMILY: DIDELPHIDAE (Opossums)
Virginia Opossum (*Didelphis virginiana*)
ORDER: INSECTIVORA (Insectivores)
FAMILY: TALPIDAE (Moles)
Broad-footed Mole (*Scapanus latimanus*)
ORDER: CHIROPTERA (Bats)
FAMILY: VESPERTILIONIDAE (Evening Bats)
Western Red Bat (*Lasiurus blossevillii*)
California Myotis (*Myotis californicus*)
Western Pipistrelle (*Pipistrellus hesperus*)
Big Brown Bat (*Eptesicus fuscus*)
Pallid Bat (*Antrozous pallidus*)
FAMILY: MOLOSSIDAE (Free-tailed Bat)
Brazilian Free-tailed Bat (*Tadarida brasiliensis*)
California Mastiff Bat (*Eumops perotis* ssp. *californicus*)
ORDER: LAGOMORPHA (Rabbits, Hares, and Pikas)
FAMILY: LEPORIDAE (Rabbits and Hares)
*Desert Cottontail (*Sylvilagus audubonii*)
*Black-tailed (Hare) Jackrabbit (*Lepus californicus*)
ORDER: RODENTIA (Squirrels, Rats, Mice, and relatives)
FAMILY: SCIURIDAE (Squirrels, Chipmunks, and Marmots)
*California Ground Squirrel (*Otospermophilus beecheyi*)
FAMILY: GEOMYIDAE (Pocket Gophers)
*Botta's Pocket Gopher (*Thomomys bottae*)
FAMILY: CRICETIDAE (Native Mice, Rats, and Voles)
House Mouse (*Mus musculus*)
Western Harvest Mouse (*Reithrodontomys megalotis*)
*Deer Mouse (*Peromyscus maniculatus*)
California Vole (*Microtus californicus*)
FAMILY: HETEROMYIDAE (Pocket Mice, Kangaroo Rats)
Little Pocket Mouse (*Perognathus longimembris*)
San Joaquin Pocket Mouse (*Perognathus inornatus*)
Heermann Kangaroo Rat (*Dipodomys heermani*)
San Joaquin Kangaroo Rat (*Dipodomys nitratoides*)
FAMILY: MURIDAE (Old World Rats and Mice)
Norway Rat (*Rattus norvegicus*)
House Mouse (*Mus musculus*)
ORDER: CARNIVORA (Carnivores)
FAMILY: CANIDAE (Foxes, Wolves, and relatives)
Coyote (*Canis latrans*)
Gray Fox (*Urocyon cinereoargenteus*)

FAMILY: PROCYONIDAE (Raccoons and relatives)
Raccoon (*Procyon lotor*)
FAMILY: MUSTELIDAE (Weasels, Badgers, and relatives)
Long-tailed Weasel (*Mustela frenata*)
Badger (*Taxidea taxus*)
Striped Skunk (*Mephitis mephitis*)
FAMILY: FELIDAE (Cats)
Bobcat (*Lynx rufus*)
Domestic Cat (*Felis domesticus*)

APPENDIX B: FIELD NOTES



Field Data Form CES Mendota

Date: 20201230	Crew: R. Shields	Page: 1 of: 1	Proj#: 2513-01
Vehicle/Miles: 294	Weather:	Start Time:	End Time:
Plant Species	**Plants Cont'd**	**Birds**	**Herps**
		RTHA	
		BAWO	
		HOLA	
		GHOW pellets	
		ROPI	
		WCSP	
		GCSP	
		TUVU	
		NOMO	
		SAVS	
		KILL	
		HOSP	
		HOFI	**Mammals**
		BLPH	CA Grnd Sq.
		WEME	Audubon's cottontail
		YRWA	Black-tailed Hare
			Gopher sign
			Domestic dogs (2)
		Fly over	
		LWBCV	
		WEIB	
		AWPE	

Notes: Observed Barn owl & great-horned owl pellets in the main power plant. I flushed a barn owl. Observed a red-tailed hawk on a nest on the staircase/ladder of the tower next to the plant. With low she was protecting it, I suspect she had eggs on the nest.
I found CA Grnd Squirrel burrows on the berm of a dry catchment pond just south of the power plant. The burrow appeared to have been predated by a canine. I suggest BUOW surveys be done ×.
Pocket gopher burrows throughout disturbed area south of power plant.
(2) German shepards entered the project site at the southern end. Multiple hare & cottontail observed. No badger predation signs burrows. No SWHA observed.

Site visit —

APPENDIX C: USFWS IPAC QUERY RESULT

IPaC **U.S. Fish & Wildlife Service**

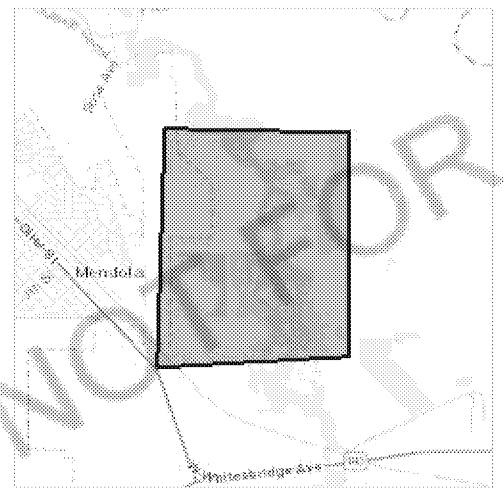
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Fresno County, California



Local office

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS

Fresno Kangaroo Rat Dipodomys nitratoides exilis — Endangered
There is **final** critical habitat for this species. Your location is outside the critical habitat.
https://ecos.fws.gov/ecp/species/5150

San Joaquin Kit Fox Vulpes macrotis mutica — Endangered
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/2873

Birds

NAME	STATUS
Yellow-billed Cuckoo Coccyzus americanus There is **proposed** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Blunt-nosed Leopard Lizard Gambelia silus No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/625	Endangered
Giant Garter Snake Thamnophis gigas No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4482	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog Rana draytonii There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander Ambystoma californiense There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS

Delta Smelt Hypomesus transpacificus There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/321	Threatened

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp Branchinecta lynchi There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/498	Threatened

Flowering Plants

NAME	STATUS
Palmate-bracted Bird's Beak Cordylanthus palmatus No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1616	Endangered
San Joaquin Wooly-threads Monolopia (=Lembertia) congdonii No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/3746	Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Burrowing Owl Athene cunicularia This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9737	**Breeds Mar 15 to Aug 31**
Clark's Grebe Aechmophorus clarkii This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	**Breeds Jan 1 to Dec 31**

Common Yellowthroat Geothlypis trichas sinuosa — Breeds May 20 to Jul 31
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/2084

Lawrence's Goldfinch Carduelis lawrencei — Breeds Mar 20 to Sep 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9464

Long-billed Curlew Numenius americanus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/5511

Marbled Godwit Limosa fedoa — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9481

Mountain Plover Charadrius montanus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3638

Nuttall's Woodpecker Picoides nuttallii — Breeds Apr 1 to Jul 20
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9410

Short-billed Dowitcher Limnodromus griseus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9480

Song Sparrow Melospiza melodia — Breeds Feb 20 to Sep 5
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Spotted Towhee Pipilo maculatus clementae — Breeds Apr 15 to Jul 20
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/4243

Tricolored Blackbird Agelaius tricolor — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3910

Whimbrel Numenius phaeopus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9483

Willet Tringa semipalmata — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Yellow-billed Magpie Pica nuttalli — Breeds Apr 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9726

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of

presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

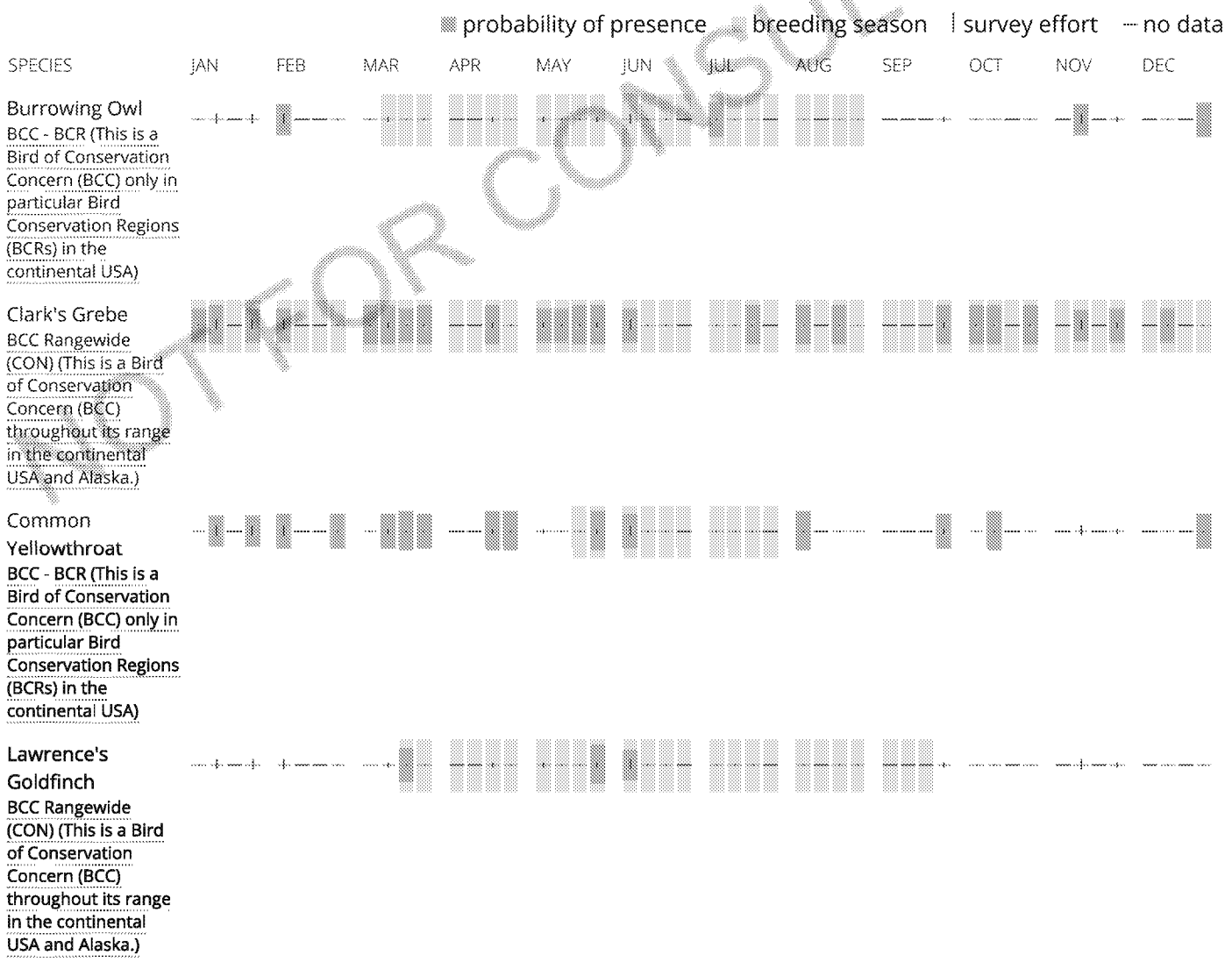
Breeding Season ( )
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort ( )
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (---)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Long-billed Curlew
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Marbled Godwit
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

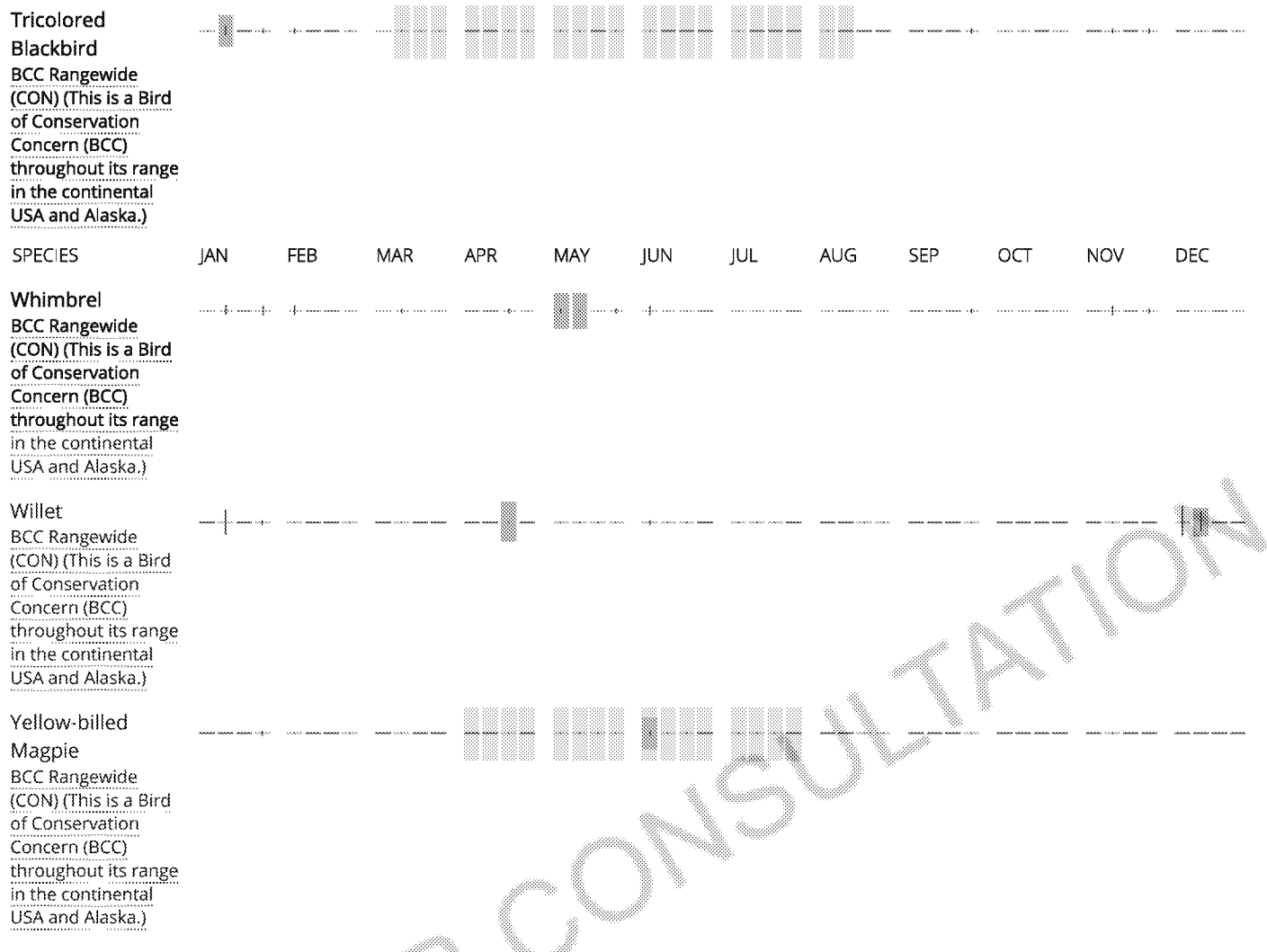
Mountain Plover
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Nuttall's Woodpecker
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

Short-billed Dowitcher
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Song Sparrow
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

Spotted Towhee
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND

PEM1C
PEM1A

FRESHWATER FORESTED/SHRUB WETLAND

PSSA

FRESHWATER POND

PUBK
PUBF

RIVERINE

R2UBH
R5UBFx
R5UBF

A full description for each wetland code can be found at the National Wetlands Inventory website

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.